IN THE CLAIMS

1.   (previously presented) A computer-accessible medium comprising:

a translator that is operable to receive a non-procedural image annotation template to enable text to be embedded on a medical image, the translator being operable to translate the non-procedural image annotation template to image annotation source code; and

a compiler operably coupled to the translator, the compiler being operable to receive the image annotation source code and to compile the source code into an image annotation executable adapted to be installed on a medical imaging system to enable the medical image including the embedded text to be viewed.

2.   (original) The computer-accessible medium of claim 1, wherein the non-procedural image annotation template further comprises a mixture of XML (Extensible Markup Language) and conventional numerical expressions based on C language syntax.

3.   (original) The computer-accessible medium of claim 1, wherein the image annotation executable further comprises an annotation presentation description.

4.   (original) The computer-accessible medium of claim 1, wherein the translator further comprises:

an iterator object for an expression tree of the non-procedural image annotation template; and

a lexical analyzer of the procedural image annotation template.

5.   (original) The computer-accessible medium of claim 1, wherein the image annotation source code further comprises an object-oriented image annotation source code and the compiler further comprises an object-oriented compiler.

6.   (previously presented) The computer-accessible medium of claim 5, wherein the object-oriented image annotation source code further comprises high-level language image annotation source code and the object-oriented compiler further comprises a high-level language compiler.

7.   (previously presented) The computer-accessible medium of claim 1, wherein the image annotation executable further comprises instructions that are native to a processor of a medical imaging system.

8.   (previously presented) A computer-accessible medium having executable instructions to generate a medical image annotation executable from a non-procedural image annotation template to annotate images, the executable instructions capable of directing a processor to perform:

translating the non-procedural image annotation template to image annotation source code, wherein non-procedural image annotation template comprises non-procedural expression of calculations and operations to annotate a medical image with embedded text and wherein the procedural image annotation source code comprises procedural expression of the calculations and operations to enable a medical imaging system to annotate the medical image with embedded text; and

compiling the image annotation source code into an image annotation executable.

9.   (original) The computer-accessible medium of claim 8, wherein the compiling further comprises:

targeting the compiling to an instruction set of a processor of an imaging system.

10.   (original) The computer-accessible medium of claim 8, further comprising executable instructions capable of directing a processor to perform:

transferring the image annotation executable to the medical imaging system.

11.   (canceled)

12.   (original) The computer-accessible medium of claim 8, wherein the non-procedural image annotation template is written in a language that does not require procedural operations and wherein the procedural image annotation source code further comprises calculations and operations to annotate the medical image with embedded text.

13.   (previously presented) A development system stored on a computer-accessible medium, the development system comprising:

apparatus operable to translate a non-procedural image annotation template to image annotation source code, wherein non-procedural image annotation template comprises non-procedural expression of calculations and operations to annotate a medical image with embedded text and wherein the procedural image annotation source code comprises procedural expression of the calculations and operations to annotate the medical image with the embedded text; and

apparatus operable to compile the image annotation source code into a medical image annotation executable, to an instruction set of a processor of a medical imaging system.

14.   (previously presented) The development system of claim 13, further comprising:

apparatus operable to transfer the image annotation executable to an imaging system.

15.   (original) The development system of claim 13, wherein the non-procedural image annotation template is written in a language that does not require procedural

operations and wherein the procedural image annotation source code further comprises calculations and operations to annotate the medical image with embedded text.

16.   (previously presented) A translator recorded on a computer-accessible medium, the translator being operable to receive a non-procedural image annotation template and to translate the non-procedural image annotation template to high-level language source code, the translator comprising:

a parser of the non-procedural image annotation template that includes calculations and operations to annotate a medical image with embedded text; and

a translator of the parsed non-procedural image annotation template to the high-level language source code.

17.   (currently amended) The translator of claim 16, wherein the parser of the non-procedural image annotation template further comprises:

an initiator of a parser of the non-procedural image annotation template, the parser being compliant with the Simple API (Application Programming Interface) for XML standard;

an element starter;

an element parser;

an element ender; and

an element attacher.

18.   (currently amended) The translator of claim 16, wherein the translator of the parsed non-procedural image annotation template further comprises:

a writer of high-level language class package source code;

a writer of high-level language import statement source code;

a writer of high-level language class declaration source code;

a writer of high-level language variable declaration source code; and

a filler of hash table representing at least one DICOM (Digital Imaging and Communications in Medicine) element of the high-level language source code.

19.   (currently amended) The translator of claim 18, wherein the filler of hash tables representing elements of the high-level language source code further comprises:

a writer of high-level language source code that constructs a group tree as described by the elements of the non-procedural image annotation template;

a writer of high-level language source code that loads assigner attributes in an ApStyle (Annotation Presentation Style) object and hashes with instances of run-time class declarations;

a writer of high-level language source code that loads a data structure adapted for storage of DICOM elements with all DICOM elements that are required for annotation;

a writer of high-level language source code that loads the data structure adapted for tool-tip data with character strings;

a writer of high-level language source code that initializes a layout data structure that is designed to hold annotation strings for each quadrant, line, and segment;

a writer of high-level language source code that invalidates all variable contents, as one would use if this object was assigned to control annotation of another image;

a writer of high-level language source code that generates comments that document a runtime variable updates object; and

a writer of high-level language source code that evaluates expressions in order of dependencies.

20.   (previously presented) A computer-accessible medium having executable instructions to translate a non-procedural image annotation template to high-level language source code, the executable instructions capable of directing a processor to perform:

parsing the non-procedural image annotation template comprising

initializing a parser of the non-procedural image annotation template, the non-procedural image annotation template including calculations and operations to annotate a medical image with embedded text, the parser being compliant with the Simple API for XML standard;

starting an element of the non-procedural image annotation template;

parsing an element of the of the non-procedural image annotation template using the parser;

ending an element of the non-procedural image annotation template; and

attaching the parsed element,

repeating the starting, parsing, ending and attaching for each element of the non-procedural image annotation template, yielding a parsed non-procedural image annotation template,

the translating further comprising:

translating the parsed non-procedural image annotation template to high-level language source code.

21. (previously presented) The computer-accessible medium of claim 20, wherein the translating of the parsed non-procedural image annotation template further comprises:

writing a high-level language class package;

writing high-level language import statements;

writing high-level language class declarations;

writing high-level language variable declarations; and

filling hash tables representing DICOM elements of the high-level language source code.

22. (original) The computer-accessible medium of claim 20, wherein the non-procedural image annotation template further comprises a mixture of XML and conventional numerical expressions based on C language syntax.

23. (previously presented) A method to translate a non-procedural image annotation template to high-level language source code, the translator comprising:

parsing the non-procedural image annotation template comprising

initializing a parser of the non-procedural image annotation template, the parser being compliant with the Simple API for XML standard;

starting an element of the non-procedural image annotation template;

parsing an element of the of the non-procedural image annotation template using the parser;

ending an element of the non-procedural image annotation template; and

attaching the parsed element,

repeating the starting, parsing, ending and attaching for each element of the non-procedural image annotation template, yielding a parsed non-procedural image annotation template,

the translating further comprising:

translating the parsed non-procedural image annotation template to high-level language source code to annotate a medical image with embedded text.

24. (previously presented) The method of claim 23, wherein the translating of the parsed non-procedural image annotation template further comprises:

writing a high-level language class package;

writing high-level language import statements;

writing high-level language class declarations;

writing high-level language variable declarations; and

filling hash tables representing DICOM elements of the high-level language source code.

25. (original) The method of claim 23, wherein the non-procedural image annotation template further comprises a mixture of XML and conventional numerical expressions based on C language syntax.

26. (currently amended) A high-level language-based system comprising:

apparatus operable to parse a non-procedural image annotation template comprising:

apparatus operable to initialize a parser of the non-procedural image annotation template, the parser being compliant with the Simple API for XML standard;

apparatus operable to start an element of the non-procedural image annotation template;

apparatus operable to parse an element of the of the non-procedural image annotation template using the parser;

apparatus operable to end an element of the non-procedural image annotation template; and

apparatus operable to attach the parsed element,

apparatus operable to repeat the starting, parsing, ending and attaching for each element of the non-procedural image annotation template, yielding a parsed non-procedural image annotation template,

the high-level language-based system further comprising apparatus operable to translate comprising:

apparatus operable to write a high-level language class package;

means for writing high-level language import statements;

apparatus operable to write high-level language class declarations;

apparatus operable to write high-level language variable declarations; and

apparatus operable to fill hash tables representing DICOM elements of high-level language source code.

27.   (previously presented) The high-level language-based system of claim 26, wherein the non-procedural image annotation template further comprises a mixture of XML and conventional numerical expressions based on C language syntax.

28.   (previously presented) A computer-accessible medium comprising:

a template repository that is operable to store one or more non-procedural image annotation templates, the non-procedural image annotation templates each adapted to enable text to be embedded on a medical image;

a storer of the one or more non-procedural image annotation templates, operably coupled to the template repository; and

a selector of the one of the non-procedural image annotation templates, operably coupled to the template repository.

29.   (original) The computer-accessible medium of claim 28, wherein the one or more non-procedural image annotation templates further comprises a computed tomography non-procedural image annotation template.

30. (previously presented) The computer-accessible medium of claim 28, wherein the one or more non-procedural image annotation templates further comprises a magnetic-resonance non-procedural image annotation template.

31. (previously presented) A computer-accessible medium having executable instructions to generate an image annotation executable from a non-procedural image annotation template to annotate images, the executable instructions capable of directing a processor to perform:

storing the one or more non-procedural image annotation templates in a template repository, and

selecting one of the non-procedural image annotation templates in the template repository to enable text to be embedded on a medical image.

32. (original) The computer-accessible medium of claim 31, wherein the one or more non-procedural image annotation templates further comprises a computed tomography non-procedural image annotation template.

33. (original) The computer-accessible medium of claim 31, wherein the one or more non-procedural image annotation templates further comprises a magnetic-resonance non-procedural image annotation template.

34. (previously presented) A computer-accessible medium comprising:

an image annotation executable; and

an image viewer, operable to receive the image annotation executable, an image and an image annotation object, the image annotation object containing text to be embedded on a medical image, the image viewer being operable to execute instructions contained in the image annotation executable and using text from the image annotation object, and the image viewer

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being operable to generate an annotated medical image that is annotated with the text from the image annotation object.

35.   (original) The computer-accessible medium of claim 34, wherein the instructions further comprise computer instructions that are native to a processor, the processor being operably coupled through a bus to the computer-accessible medium.

36.   (original) The computer-accessible medium of claim 34, wherein the image annotation executable further comprises an image annotation executable that is compiled from a non-procedural image annotation template.

37.   (original) The computer-accessible medium of claim 34, wherein the image annotation executable further comprises an annotation presentation description.

38.   (original) The computer-accessible medium of claim 34, wherein the image annotation object further comprises the image.

39.   (original) The computer-accessible medium of claim 37, wherein the image annotation object further comprises an image annotation object that conforms to standard that defines data elements in object-oriented terms, each object having a unique tag, name, characteristics and semantics.

40.   (original) The computer-accessible medium of claim 34, wherein the image further comprises an unannotated image.

41.   (original) The computer-accessible medium of claim 34, wherein the image annotation executable further comprises:

an object to select a style class object that is appropriate for imaging of a modality; and

an instantiated style class object.

42.   (original) The computer-accessible medium of claim 41, wherein the modality is selected from a group consisting of magnetic resonance, computed tomography, X-ray, ultrasound and positron emission tomography.

43.   (original) The computer-accessible medium of claim 41, wherein the viewer further comprises:

an object to invoke one or more methods in the object that selects a style class object that is appropriate for imaging of a modality; and

an object to receive parsed annotation data and the image from the image annotation object through a host image annotation parser, and to forward the image and text to the style class object that is appropriate for imaging of a modality.

44.   (original) The computer-accessible medium of claim 43, wherein the style class object that is appropriate for imaging of a modality further comprises:

a method to forward the image and text to a host text drawer in the viewer; and

a method to forward the image and text to a graphic utilities object that is native to an operating system that is running on a processor that is operably coupled to the computer-accessible medium, whereupon the graphic utilities object is to generate the annotated image.

45.   (original) A computer-accessible medium having executable instructions to generate and view an annotated medical image, from an image annotation object and an annotation presentation description, the image annotation object having an image, the annotation presentation description having instructions that are native to a processor that is operably coupled to the computer accessible medium, the executable instructions capable of directing the processor to perform:

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receiving the annotation presentation description and the image annotation object; and

invoking the native instructions contained in the annotation presentation description and using text from the image annotation object, to generate and view the annotated medical image that is annotated with the text from the image annotation object.

46.   (original) The computer-accessible medium of claim 45, wherein the annotation presentation description further comprises an annotation presentation description that is compiled from a non-procedural image annotation template.

47.   (original) The computer-accessible medium of claim 45, wherein the image annotation object further comprises an image annotation object that conforms to standard that defines data elements in object-oriented terms, each object having a unique tag, name, characteristics and semantics.

48.   (original) The computer-accessible medium of claim 45, wherein the annotation presentation description further comprises executable instructions capable of directing the processor to perform:

selecting a style class object that is appropriate for imaging of a modality; and

instantiating the selected style class object.

49.   (original) The computer-accessible medium of claim 48, wherein the modality is selected from a group consisting of magnetic resonance, computed tomography, X-ray, ultrasound and positron emission tomography.

50.   (original) The computer-accessible medium of claim 45, wherein the executable instructions further comprise executable instructions capable of directing the processor to perform:

receiving parsed annotation data and the image from the image annotation object through a host image annotation parser; and

forwarding the image and text to a graphic utilities object that is native to an operating system that is running on the processor, whereupon the graphic utilities object is to generate and view the annotated image.

51.   (original) A method to generate and view an annotated medical image, from an image annotation object having an image and an annotation presentation description, wherein the annotation presentation description further comprises an annotation presentation description that is compiled from a non-procedural image annotation template and has instructions that are native to a processor that is operably coupled to the computer accessible medium, the method comprising:

receiving the annotation presentation description and the image annotation object, the image annotation object containing text; and

invoking the native instructions contained in the annotation presentation description and using text from the image annotation object, to generate and view the annotated medical image that is annotated with the text from the image annotation object.

52.   (original) The method of claim 51, wherein the image annotation object further comprises an image annotation object that conforms to the Digital Imaging and Communications in Medicine standard.

53.   (original) The method of claim 51, further comprising:

selecting a style class object that is appropriate for imaging of a modality, wherein the modality is selected from a group consisting of magnetic resonance, computed tomography, X-ray, ultrasound and positron emission tomography; and

instantiating the selected style class object.

54.   (original) The method of claim 51, further comprising:

receiving parsed annotation data and the image from the image annotation object through a host image annotation parser; and

forwarding the image and text to a graphic utilities object that is native to an operating system that is running on the processor, whereupon the graphic utilities object is to generate the annotated image.

55.   (original) A high-level language-based system to generate and view an annotated medical image, from an annotation presentation description and an annotation object, wherein the annotation object conforms to the Digital Imaging and Communications in Medicine standard and has an image, wherein the annotation presentation description further comprises an annotation presentation description compiled from a non-procedural image annotation template and has instructions that are native to a processor, the system comprising:

high-level language-based apparatus operable to receive the annotation presentation description and the image annotation object, the image annotation object containing text; and

high-level language-based apparatus operable to invoke the native instructions contained in the annotation presentation description and using text from the image annotation object, to generate and view the annotated medical image that is annotated with the text from the image annotation object.

56.   (previously presented) The high-level language-based system of claim 55, further comprising:

high-level language-based apparatus operable to select a style class object that is appropriate for imaging of a modality, wherein the modality is selected from a group consisting of magnetic resonance, computed tomography, X-ray, ultrasound and positron emission tomography;

high-level language-based apparatus operable to instantiate the selected style class object;

high-level language-based apparatus operable to receive parsed annotation data and the image from the image annotation object through a host image annotation parser; and

high-level language-based apparatus operable to forward the image and text to a graphic utilities object that is native to an operating system that is running on the processor, whereupon the graphic utilities object is to generate the annotated image.

57.   (previously presented) A computer system comprising:

a processor;

a bus operably coupled to the processor and

a computer-accessible medium comprising a viewer that is operable to access computer instructions that are native to the processor, the computer instructions having been generated by a processor on another computer system, the computer-accessible medium being operably coupled to the processor through the bus, the computer instructions being adapted to enable text to be embedded on a medical image.

58.   (original) The computer system of claim 57, wherein the viewer further comprises a browser and the computer instructions further comprise computer instructions encapsulated in a browser plug-in component.

59.   (previously presented) A computed tomography imaging system comprising:

a processor;

a bus operably coupled to the processor and

a computer-accessible medium comprising a viewer that is operable to access:

objects that conform to the Digital Imaging and Communications in Medicine standard, the objects comprising an image and an annotation presentation description; and

computer instructions that are native to the processor, the computer instructions having been generated by a processor on another system, the computer-accessible medium being operably coupled to the processor through the bus.

60.   (original) The computed tomography imaging system of claim 59, wherein the viewer further comprises a browser and the computer instructions further comprise computer instructions encapsulated in a browser plug-in component.

61.   (original) The computer system of claim 59, wherein the computer instructions further comprise computer instructions encapsulated in a dynamic link library.

62.   (previously presented) A computer-accessible medium comprising:

an encapsulation of medical image annotation native computer instructions; and

a viewer that is operable to access the encapsulated medical image annotation computer instructions, the instructions programmed to annotate a medical image with embedded text.

63.   (original) The computer-accessible medium of claim 62 wherein the encapsulated image annotation computer instructions further comprise arithmetic calculations and special string operations for annotation that are native to a processor that is operably coupled to the computer-accessible medium.

64.   (previously presented) A computer-accessible medium having executable instructions to generate an annotated medical image, the executable instructions capable of directing a processor to perform:

invoking executable instructions that are native to the processor, the executable instructions being contained in a medical image annotation executable, wherein operands to the native computer instructions include text; and

generating an annotated medical image that is annotated with the text from the image annotation object.

65.   (original) The computer-accessible medium of claim 64, wherein the executable instructions further comprise executable instructions capable of directing the processor to perform displaying the annotated image on a visual display in a browser.

66.   (original) The computer-accessible medium of claim 65, wherein the image annotation object further comprises an object that is encoded according to a standard that defines data elements in object-oriented terms, each object having a unique tag, name, characteristics and semantics.

67.   (original) The computer-accessible medium of claim 65, wherein the original image further comprises an original unannotated medical image.

68.   (original) The computer-accessible medium of claim 65, wherein tl original image further comprises an original image contained with the image annotation object.

69.   (original) The computer-accessible medium of claim 65, wherein the image annotation executable further comprises an annotation presentation description.

70.   (original) A computer-accessible medium having executable instructions to generate an annotated medical image, an image annotation object and an annotation presentation description, the executable instructions capable of directing a processor to perform:

invoking executable instructions that are native to the processor, the executable instructions being contained in the annotation presentation description, operands to the native computer instructions including text, the image annotation object being encoded according to a standard that defines data elements in object-oriented terms, the image annotation object having a unique tag, name, characteristics and semantics;

annotating an original medical image with the text from the image annotation object; and

displaying the annotated image on a visual display.

71.   (original) The computer-accessible medium of claim 70, wherein the executable instructions further comprise annotation calculations and operations.

72.   (previously presented) The computer-accessible medium of claim 70, wherein the displaying further comprises a displaying of the annotated image in a browser.

73.   (original) The computer-accessible medium of claim 70, wherein the processor further comprises a processor of a medical imaging device.

74.   (original) The computer-accessible medium of claim 70, wherein the original image further comprises an original image contained with the image annotation object.

75.   (previously presented) An apparatus comprising:

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a processor; and

an encapsulation of image annotation computer instructions, the computer instructions being native to the processor, the computer instructions being generated by a processor on another apparatus.

76. (original) A method of updating a medical imaging system with new annotation calculations, the method comprising:

generating on a development system an image annotation executable that includes computer instructions that are native to a processor of the medical imaging system; and

forwarding the image annotation executable through the Internet to the medical imaging system.

77. (original) The method of claim 76, wherein the image annotation executable further comprises an image annotation executable that package is a form selected from the group consisting of a browser-plugin and a dynamic link library.

78. (previously presented) A method of updating a medical imaging system with new annotation calculations, the method comprising:

receiving an image annotation executable that includes computer instructions of the new annotation calculations that are native to a processor of the medical imaging system; and

storing the image annotation executable in a location that is accessible to a viewer that is enabled to access the image annotation executable.

79. (original) The method of claim 78, wherein receiving further c   ͺ͞ᵉˢ:

receiving the image annotation executable from a manufacturer of the medical imaging system.

80.   (original) The method of claim 78, wherein the medical imaging system further comprises a computer tomography medical imaging system.

81.   (original) The method of claim 78, wherein the medical imaging system further comprises a magnetic imaging medical imaging system.